

## CLAIMS

1. A dehumidification process for granulated plastics materials, comprising a process-gas treatment step (4) in which the moisture content of the process gas is reduced substantially, and a subsequent  
5 granule-treatment step (3) by contact with the process gas having a reduced moisture content, characterized in that, in the process-gas treatment step, the reduction of the moisture content of the process gas is regulated (20) in dependence on the granules to be treated.
2. A process according to Claim 1 in which the process gas is air.
- 10 3. A process according to Claim 1 or Claim 2, in which the reduction of the moisture content is regulated by the bypassing (21, 22) of a variable fraction of the process gas between positions upstream and downstream of the moisture-content reduction treatment.
4. A process according to one or more of the preceding claims in which  
15 the reduction of the moisture content is regulated, downstream of the treatment to reduce the moisture content of the process gas, by means of partial humidification (30) of the gas.
5. A process according to Claims 3 and 4 in which the partial humidification is performed downstream of the recombination of the  
20 fraction of process gas which is subjected to moisture-content reduction treatment with the fraction of process gas which has bypassed that treatment.
6. A process according to one or more of the preceding claims in which the moisture-content reduction is achieved by the passage of the  
25 process gas through dehumidification towers (7a, 7b) and is regulated

by variation of the operative efficiency of the towers.

7. A process according to Claim 6 in which the operative efficiency of the towers is varied by modifying the regeneration phase thereof.

8. A process according to one or more of the preceding claims in which  
5 the reduction of the moisture content of the process gas is regulated in dependence on the use of the final product manufactured from the granules.

9. A process according to one or more of the preceding claims in which the granulated plastics material is based on polyethylene terephthalate  
10 (PET).

10. A process according to one or more of the preceding claims in which the moisture content of the process gas can be varied between a first value at which the dew point of the gas is  $-10^{\circ}\text{C}$  and a second value at which the dew point is  $-60^{\circ}\text{C}$ .

15 11. A process according to Claims 9 and 10 in which the moisture content of the process gas is regulated in a manner such as to have a dew point of between  $-10^{\circ}\text{C}$  and  $-40^{\circ}\text{C}$  when the granules to be subjected to dehumidification are intended for the production of containers for beverages of delicate flavour and to have a dew point of  
20 between  $-50^{\circ}\text{C}$  and  $-60^{\circ}\text{C}$  when the granules to be subjected to dehumidification are intended for the production of containers for beverages of strong flavour.

12. A plant for dehumidification of granulated plastics materials comprising a process-gas treatment unit (4) which is arranged to  
25 reduce the moisture content of the process gas substantially and a unit

(3) for the treatment of the granules by means of the process gas, characterized in that the plant comprises means (20) for the regulation of the moisture content of the process gas.

13. A plant according to Claim 12 in which the regulation means (20) 5  
comprise means (21, 22) for bypassing the process-gas treatment unit (4) in order to bypass a variable fraction of the process gas between positions upstream and downstream of the process-gas treatment unit.

14. A plant according to Claim 13 in which the process-gas treatment unit (4) comprises a pair of dehumidification towers (7a, 7b) of which 10  
one is connected to the granule-treatment unit (3) and the other is connected to a regeneration circuit (15), as well as a first distribution unit and a second distribution unit (13, 14) which are disposed upstream and downstream of the dehumidification towers, respectively, and which are arranged selectively to connect one or 15  
other of the towers to the granule-treatment unit or to the regeneration circuit, the bypass means including a line (21) extending between the first and second distribution units, a regulation valve (22) mounted in the line, and means (23) for controlling the regulation valve in order to regulate the fraction of process gas to be bypassed 20  
between the distribution units (13, 14) in dependence on the desired moisture content of the process gas output by the gas-treatment unit.

15. A plant according to any one of Claims 12, 13 and 14 in which the regulation means comprise a partial humidification unit (30) disposed downstream of the process-gas treatment unit.

25 16. A plant according to Claim 14 or Claim 15 in which the partial

humidification unit (30) is disposed downstream of the second distribution unit (14).